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SACCHARINE SORGHUMS (*Andropogon sorghum* var.).

On account of their ability to withstand drought, the sorghums have become the chief forage crop of the semiarid regions.

None of the sorgos (sweet sorghums) are valued for grain purposes, because the yield is light and the seed contains too much tannin. As a forage crop, however, they are superior to the kafirs, milos, and durras, not only because of the greater amount of sugar in the stems, but also because the yield is greater. Under favorable conditions yields of 6 to 10 tons of cured fodder per acre may be expected, especially where the season is sufficiently long to allow two cuttings. In regions where it is commonly grown, sorgo is used to a considerable extent for the production of sirup.

VARIETIES.

Minnesota Amber.—This variety is one of the best known of the early sorghums. It is a selection from the Early or Black Amber, characterized by a loose seed head, black glumes, slender stems, and rather narrow leaves. It matures in from 75 to 90 days and is adapted to the northern part of the sorghum-producing section.

Dakota Amber.—This variety is a selection (S. D. 341) from Minnesota Amber. Its principal advantage is its earliness. It has the characteristics of the ordinary Black Amber, loose seed head with black glumes, etc. It is, however, somewhat smaller and is the earliest of the ambers, maturing in 75 to 90 days. It is suited to the most northern part of the sorghum-producing section, yielding less than the longer season sorgos, like Sumac.

Red Amber.—This variety is characterized by its slender stems, rather narrow leaves, and loose, open seed head. The seeds are larger than Sumac, more elliptical in shape, and yellowish brown in color. The glumes, which are of a dark-red color, nearly cover the seed. This variety is adapted to the region immediately north of the Sumac. It requires 80 to 100 days for maturity.

Sumac.—This variety is one of the best known of the sweet sorghums, and is usually considered one of the sweetest and leafiest of the group. In the sections to which it is adapted it produces a very large yield of forage, but requires a long season for maturity, producing seed in 108 to 114 days. The stem of the plant is rather thick, of medium height, and extremely leafy, bearing 14 to 16 leaves. The seed head is small, erect, compact, brownish red in color. Sumac sorgo is well adapted to most of Texas and Oklahoma and to all of Arkansas, Louisiana, Mississippi, Tennessee, Alabama, Georgia, Florida, South Carolina, North Carolina, and Virginia. It will also do well in parts of New Mexico and Arizona, and is well suited to the southern parts of Kentucky, Missouri, Kansas, and the central valley of California.

Orange.—This sorgo has a rather large stocky stem, which is slightly less leafy than the Sumac and contains less juice and sugar. The seed head is more compact than those of the Ambers, and dark brown in color. The Orange is a trifle earlier than the Sumac, being adapted to about the same region as the Red Amber. It does not, however, make as good a quality of forage as the latter, because the stems are coarser.

Honey.—This variety is a rather tall, somewhat coarse-growing type. Its stems are very leafy, juicy, and sweet, and the seed head is erect, reddish in color, and of an open broom-corn type. The seed are elliptical in shape and almost entirely inclosed by the red-brown glumes. It is a long-season variety, somewhat later than the Sumac and valuable for both fodder and sirup in the Southern States.

Planter.—This variety most resembles the Orange, but can be distinguished from it by the light straw-brown seed head. The straw-colored seeds are half or more inclosed by light-brown, very pointed glumes. Its stems are about as stocky and leafy as the Orange, but lack in juice and sugar content. It is later than the Orange and makes a larger yield of fodder, but lodges badly. It is not a very desirable variety.

Gooseneck.—This is the tallest, heaviest stemmed variety among the sorgos here described. Its stems, which are exceedingly juicy and sweet, reach a height of 10 to 12 feet and a diameter at the base of 1 to 1½ inches. The heads are compact and recurved, or goosenecked. The seeds are yellowish brown in color and entirely inclosed in the shiny black glumes. It requires a longer season for maturity than the Sumac and is of some value for forage, though chiefly a sirup sorghum.

Freed.—This variety originated on the farm of Mr. J. K. Freed, Scott City, Kans. It is a rather small, extremely early sorghum, with semisweet stalks and large, almost pure white seeds. These seeds are practically free from tannin, so that we have in this a dual-purpose sorghum, useful both for fodder and seed. It is even earlier than the Dakota Amber and is adapted to the same region. The Freed sorgo has been known by the names "White Amber," "White Kaoliang," and "White Sorgo." It should be planted a trifle thicker than the other sorghums, as it does not germinate so well.

CULTURE.

Planting.—Sorgo should be planted as soon after corn as the ground is thoroughly warm. Where the season is long it may be planted from this date to as late as will permit the crop to mature safely, but if two cuttings are desired a comparatively early planting is necessary. In the humid regions of the South where the sorghum midge is troublesome, early planting is recommended. It may be planted either in a furrow with the lister, or surface-planted with an ordinary corn planter. The first method is advised in the arid regions. Sumac sorgo can be planted either in rows the same distance apart as Indian corn (36 to 44 inches), sown broadcast, or drilled in with a grain seeder. Planting in rows is advised in the semiarid regions as it gives a larger yield. Planted in cultivated rows, 4 to 6 pounds of seed per acre will be found ample. Sown broadcast or with a grain drill, 1 to 1½ bushels of seed per acre usually give the best results, except in the very dry sections, where 2 to 3 pecks are better. Broadcast seedings should be thick enough to keep the stalks fine.

Harvesting.—Sorgo should be harvested for forage purposes when in the late milk stage. Where a seed crop is desired, cutting can be delayed until the seed is in the late dough stage without materially decreasing the feeding value of the fodder. In the humid regions the time of cutting can be regulated to some extent by weather conditions. When grown in cultivated rows it is most efficiently and economically harvested with a corn binder and put in shocks of 20 to 30 bundles each. The corn harvester is also serviceable if the crop is to be used for silage. When sown broadcast or in close drills it is often cut with a mower and cured like other hay crops. This method is undesirable, because the sorghum is hard to cure and difficult to handle with a fork. A better method is to cut it with an ordinary wheat binder and allow the bundles to cure in shocks.

Where a seed crop is desired, it can be cut late with a corn harvester and the bundles topped after they have cured in the shock. If the grower is intent on a seed crop alone and does not care for the fodder, a quick method is to harvest the heads with a grain header adjusted so that the cutter bar will be placed at the proper height. Where this is done, the remainder of the crop can be utilized by pasturing the field. Care must be used with seed headed in this way to prevent its heating when it goes through the "sweat."

Sumac sorgo cut with a corn harvester can be stored in the barn after it is thoroughly cured, or stacked in the open. Sorghum in bundles or as loose hay turns the water well, so that there is small loss from spoiling in the stack.

Feeding.—Sorgo properly cured makes an excellent fodder or hay on account of its leafy character. All live stock eat it greedily, the large amount of sugar in the stems making it quite palatable. For silage purposes it is, perhaps, not quite equal to the kafirs and milos, because it does not have a like proportion of grain, and in addition the high sugar content makes it more liable to decay in the silo. If cut for silage when the seed is nearly hard, no trouble from spoiling will be experienced, however.

Sorgo fodder or hay is the best roughage, and in many localities in the South practically the only one used. For milk cows and work horses 12 to 18 pounds per day of the fodder or hay, if supplemented by the ordinary amount of grain, are sufficient. Sorgo roughage will be much more effective in fat production if in connection with it a small amount of some concentrate high in fat, like cottonseed meal, is given the animal. Cattle and horses are often carried through the winter without the use of grain by feeding them liberally with sorghum fodder.

Suggestions.—Pure seed is always in demand and constant care in roguing the field which is intended for seed is necessary. The seed field should be planted apart from other sorghum fields, kept free from impurities, and the roguing done as soon as the head emerges from the boot, so that no pollen will be scattered.

Different rates of seeding designed to place the plants 2, 4, 6, and 8 inches apart in the row should be tried, and different dates of seeding may also be tested in each locality.

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